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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,986	06/14/2001	Julian Schroeder	19452A-001210US	9824

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TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

BAUM, STUART F

ART UNIT	PAPER NUMBER
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1638

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DATE MAILED: 07/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,986

Applicant(s)

SCHROEDER ET AL.

Examiner

Stuart F. Baum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. The amendment filed 4/29/2003 has been entered.
Claims 44-61 are pending.
Claims 28-43 have been canceled.
2. Claims 44-61 are examined in the present office action.
3. Rejections and objections not set forth below are withdrawn.
4. The text of those sections of Title 35, U.S. Code not included in this office action can be found in a prior office action.

Utility

5. Claims 44-61 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a credible asserted utility or a well established utility.

Claims 44-61 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention. Both of these rejections are maintained for the reasons of record set forth in the Official action mailed 10/04/2002. Applicant's arguments filed 4/29/2003 have been fully considered but they are not persuasive.

Applicants contend that the specification provides description of the utility of the claimed nucleic acid, the transgenic plant and the method for producing the plant. Applicants contend that the present application provides experimental evidence that loss of ABH1 function leads to heightened sensitivity to ABA. Applicants conclude by stating that "The reduction of ABH1 protein activity in a plant, as demonstrated by the present invention, can thus enhance the plant's drought tolerance" (page 7, 1st paragraph).

The Office contends that the specification discloses the utility for a plant whose endogenous *ABH1* gene has been purportedly disrupted by a T-DNA insertion (page 20, last paragraph) and that said plant seeds exhibit a heightened sensitivity to ABA. The *abh1* mutant exhibited a heightened sensitivity to ABA which Applicants report caused leaf stomata to close in response to lower humidity when compared to a wild-type plant (paragraph bridging page 21 and 22). Applicants have not taught how a construct comprising Applicants' SEQ ID NO:1 or sequences exhibiting 70% identity to SEQ ID NO:1, or plants transformed with said construct will create the same phenotype as the *abh1* mutant. Applicants' claims are drawn to constructs in which their sequence is in sense orientation which would increase the activity of the endogenous ABH1 protein. Applicants have not disclosed a utility for such a plant.

Written Description

6. Claims 44-48, 50-54, and 56-60 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is maintained for

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the reasons of record set forth in the Official action mailed 10/04/2002. Applicant's arguments filed 4/29/2003 have been fully considered but they are not persuasive.

Applicants summarize the claimed invention and then state "Decreased turgor pressure will result when the nucleic acid is expressed in guard cells" (page 8, 3rd paragraph). Applicants contend that the recitation of the claimed invention fulfills the Written Description requirement by setting forth the structural features of the claimed genus of nucleic acids. They also contend that new claims 44-61 also set forth the functional features of the genus of nucleic acids: the ability to decrease turgor pressure in guard cells when expressed (page 8, 3rd and 4th paragraphs).

The Office contends that the disclosure of SEQ ID NO:1 satisfies the Written Description requirement for those claims drawn to SEQ ID NO:1. For claims drawn to any sequence exhibiting less than 100% sequence identity to SEQ ID NO:1, the Written Description requirement is not fulfilled based on the disclosure of SEQ ID NO:1. Applicant has not taught which amino acids are important for the protein to function properly. One skilled in the art would not know which amino acids must not be changed and which amino acids can be deleted, substituted and rearranged. In addition, the function set forth by Applicants of their claimed invention, has not been disclosed in the specification. Applicants have not taught decreasing turgor pressure by overexpressing any of the claimed sequences in guard cells. Applicants have not presented structural and functional features of the claimed nucleic acids and therefore, the Written Description requirement is not fulfilled for the claimed invention.

Enablement

7. Claims 44-61 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 10/04/2002. Applicant's arguments filed 4/29/2003 have been fully considered but they are not persuasive.

Applicants recite that the test for enablement is set forth in *In re Wands* and that Applicants' disclosure is sufficiently enabling for a person with ordinary skill in the art to practice the invention and that no undue experimentation is required. In particular, Applicants point out where in the specification certain techniques are taught that would be used by one of ordinary skill in the art to make and/or use the invention. Applicants contend that some experimentation would be necessary to identify the ABH1 polynucleotide sequences useful for practicing the invention but that it would be routine and does not constitute undue experimentation.

The Office asserts that it would require undue experimentation to practice the broadly claimed invention even though some of the techniques are routine. In particular, Applicants have not taught how one would use the broadly claimed invention to produce a plant with a decreased turgor pressure in guard cells. Applicants have only taught a mutant *abh1* plant exhibiting the claimed phenotype. As stated in the office action mailed 10/04/2002, Applicants have not demonstrated that the *abh1* mutant is a null mutant, nor have the Applicants taught how to mimic the *abh1* mutant phenotype by overexpressing any of the claimed sequences. Given that

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Applicants have not taught conserved regions of the ABH1 gene that can be used for isolating any of the claimed sequences, and given the unpredictability as stated in the previous office action, and given the breadth of the claims, undue experimentation would be required to practice the claimed invention.

8. Claims 44-61 are deemed free of the prior art, given the failure of the prior art to teach or reasonably suggest an isolated nucleic acid comprising an expression cassette comprising a promoter operably linked to a polynucleotide that is at least 70% identical to SEQ ID NO:1 or is a subsequence of at least 30 nucleotides of SEQ ID NO:1, wherein the nucleic acid causes decreased turgor pressure when expressed in a guard cell.

9. No claims are allowed.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

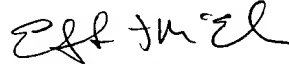
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart Baum whose telephone number is (703) 305-6997. The examiner can normally be reached on Monday-Friday 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 or (703) 305-3014 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, who may be contacted at 308-0196.

Stuart F. Baum Ph.D.

July 8, 2003


ELIZABETH F. McELWAIN
PRIMARY EXAMINER
GROUP 1800